

Mental Representation in Learning Arabic as a Second Language: A Psycholinguistic Perspective on Meaning Formation

Muslimin Resi¹, Darmawati²

¹ Institut Agama Islam Negeri Parepare, Indonesia

² Institut Agama Islam Negeri Parepare, Indonesia

Email musliminresi@iainpare.ac.id

Abstract

This study examines mental representation and meaning formation in learning Arabic as a second language from a psycholinguistic perspective. The complexity of Arabic root systems and morphosyntax often creates cognitive load, meaning ambiguity, and first language interference in learners. This study uses a qualitative approach through a conceptual-analytical literature review. The results show that meaning formation is closely related to the hierarchical and associative organization of the mental lexicon through semantic and morphological networks. Arabic language comprehension occurs through the processes of semantic mapping, morphosemantic analysis, and context integration. Learner success is influenced by working memory capacity, frequency of language exposure, and the ability to connect root words with derivations of meaning. Problems with meaning formation arise from cognitive mapping failures, weak lexical organization, and negative first language transfer. Therefore, Arabic language learning needs to be directed towards cognitive and contextual-based strategies to strengthen learners' mental representations.

Keywords: Mental Representation, Arabic Language Learning, Psycholinguistics, Meaning Formation, Mental Lexicon

ARTICLE INFO

Article history:

Received
May 21, 2026
Revised
June 19, 2026
Accepted
June 29, 2026

Published by
Website
ISSN

Copyright



STAI Masjid Syuhada Yogyakarta
<https://journal.staimsyk.ac.id/index.php/Ihtimam/index>
2774-4302

This is an open access article under the CC BY SA license
<https://journal.staimsyk.ac.id/index.php/Ihtimam/index>
© 2026 by the author (s)

INTRODUCTION

Language as a communication instrument is not only understood as a set of symbols and grammatical rules, but also as a cognitive system closely linked to human mental processes. In the context of second language (L2) learning, a person's success in understanding and using language is greatly influenced by how the brain processes, stores, and accesses linguistic information. Learning Arabic as a second language presents a unique level of complexity because it requires not only mastery of vocabulary and syntactic structures but also the learner's ability to understand the relationship between linguistic forms and conceptual meanings.

From a psycholinguistic perspective, this process is related to the formation of mental representations stored in the mental lexicon. When a learner receives Arabic input, the brain engages in sound identification, word form recognition, meaning activation, and lexical retrieval to generate appropriate linguistic responses. Therefore, vocabulary mastery in Arabic learning cannot be viewed simply as word memorization, but rather as the process of forming an organized network of meanings (semantic mapping) within the

learner's cognitive system. The stronger the mental representations formed, the easier it is for the learner to understand and use Arabic communicatively.

The urgency of understanding mental representations in Arabic language learning is increasingly relevant because Arabic has distinct morphological characteristics from many other languages, particularly Indo-European languages. Arabic utilizes a system of root words (*jidzr*) and derivational patterns (*wazan*), allowing a single root word to produce a variety of interrelated forms and meanings. For example, the root word k-t-b can produce the forms *kataba*, *maktab*, *kitab*, and *maktabah*, all related to the concept of "writing." In the cognitive process, learners not only recognize these forms separately but also construct mental associations based on their semantic and morphological relationships. Thus, mental representations become a crucial foundation in the meaning-formation process because they determine how learners connect linguistic symbols with concepts stored in memory.

Research on Arabic language learning has generally focused on pedagogical aspects and conventional teaching methods. Various studies have emphasized the effectiveness of direct methods, communicative methods, grammar-based approaches, and the use of learning media in improving Arabic language skills. These studies have made important contributions to the development of learning strategies, particularly in improving reading, writing, speaking, and listening skills (Wiwin et al., 2026). However, most of this research emphasizes performative learning outcomes rather than explaining how learners' mental processes occur when comprehending Arabic. As a result, the cognitive dimensions related to meaning formation and mental representation remain largely unexplored.

Furthermore, there is research that examines Arabic vocabulary acquisition from a purely linguistic perspective, particularly in the areas of syntax and morphology. This type of research generally examines word derivation patterns, morphological form changes, syntactic relations, and the semantic structure of Arabic. The primary focus of these studies lies in the characteristics of the Arabic language system as a formal linguistic object. These studies have successfully demonstrated the uniqueness of Arabic as a language rich in derivational patterns and morphosemantic relations (Windah Maesaroh et al., 2026). However, this research tends to focus on analyzing language structure without linking it to learners' mental mechanisms. In other words, the relationship between the Arabic morphological system and the way the learner's brain constructs meaning has not received primary attention.

On the other hand, psycholinguistic research on mental representations has developed quite extensively, particularly in the learning of English and several other European languages. These studies discuss how the mental lexicon is formed, how semantic mapping occurs, and how lexical retrieval mechanisms influence language comprehension and production. Research in this area shows that meaning formation is strongly influenced by linguistic experience, memory, word frequency, and conceptual relationships between lexicons (Stille et al., 2020). However, most of this psycholinguistic research has been conducted in languages with linear morphological systems, so the results are not necessarily fully relevant to explaining Arabic language learning, which is based on root words and derivational patterns.

However, as far as the author has observed, there remains a significant gap in Arabic language learning research, particularly regarding the relationship between Arabic

morphological structure and the formation of mental representations in non-native learners. Three previous research trends, focusing on teaching methods, formal linguistic analysis, and general psycholinguistics, have not specifically examined how Arabic root and derivation systems shape the organization of meaning in the minds of second language learners. Yet, the unique structure of Arabic has the potential to influence how learners store and access meaning mentally. Based on this, this article offers scientific novelty by placing mental representations as the primary focus of analysis, specifically in explaining the relationship between Arabic morphosemantic structure and the process of meaning formation from a psycholinguistic perspective.

In learning practice, Arabic learners often encounter various problems in meaning acquisition. Many learners experience difficulty connecting word form to its conceptual meaning due to differences in the language systems between their native language and Arabic. First language interference often causes learners to understand meaning literally without considering the semantic context and derivational patterns. Furthermore, the complexity of the root system also creates difficulties in lexical retrieval, particularly when learners must recognize the relationships between various word forms derived from the same root. Under certain conditions, learners are able to understand the grammatical structure of a word but fail to construct a complete conceptual representation of its meaning. Psycholinguistic factors such as working memory capacity, intensity of language exposure, linguistic experience, and the ability to organize the mental lexicon also influence the success of the meaning-formation process in Arabic language learning.

Based on this description, this article aims to analyze mental representations in Arabic as a second language learning from a psycholinguistic perspective. This study aims to explain the process of meaning formation in the learner's mind, the influence of Arabic morphological structure on the organization of the mental lexicon, the psycholinguistic factors that influence this process, and its implications for Arabic language learning practices. By understanding the relationship between language structure and learners' cognitive mechanisms, this article is expected to provide a theoretical contribution to the development of Arabic psycholinguistic studies and provide a practical foundation for developing more effective, contextual, and mental process-based learning strategies.

METHOD

This research employs a qualitative approach, employing descriptive-analytical library research. This qualitative approach was chosen because it focuses on understanding and interpreting the concept of mental representation in learning Arabic as a second language from a psycholinguistic perspective in depth and context. Furthermore, the library study method was used because the object of study is not field data, but rather various scientific sources relevant to the research theme. This research seeks to describe, examine, and critically analyze theories regarding mental representation, meaning formation, second language acquisition, and the morphosemantic characteristics of Arabic as they relate to learners' cognitive processes. With its descriptive-analytical nature, this research not only presents previous theories and findings but also critically interprets the relationship between Arabic language structure and meaning-formation mechanisms within the mental systems of second language learners.

The data sources in this study consist of primary and secondary sources. Primary data sources included reputable scientific journal articles, psycholinguistics textbooks, and theoretical works discussing second language acquisition (SLA), mental representation, the mental lexicon, semantic mapping, and lexical retrieval. Furthermore, literature specifically addressing Arabic morphology, the root system (*jidzr*), derivation patterns (*wazan*), and the meaning-making process in Arabic language learning also served as primary sources for the research. Secondary data sources included scientific proceedings, theses, dissertations, conceptual articles, and other supporting references relevant to the research theme. Source selection was carried out by considering academic credibility, the relevance of the theme, the novelty of the study, and its relevance to the research focus on mental representation in learning Arabic as a second language.

The data collection technique in this study employed the documentation method, namely the technique of collecting data through searching, reviewing, and recording various scientific documents related to the research object. Literature collection was carried out systematically through academic databases, scientific journals, reference books, and trusted digital sources relevant to the field of psycholinguistics and Arabic language learning. In determining literature sources, this study employed a purposive sampling technique, which involves deliberately selecting references based on specific criteria. These criteria included literature specifically addressing mental representation, second language acquisition, meaning processing from a psycholinguistic perspective, and the linguistic characteristics of Arabic that influence meaning formation. This technique was used to ensure that the data obtained fully aligns with the research focus and provides a strong theoretical foundation.

The data analysis procedure was carried out in a gradual and systematic manner through several main steps: organizing, synthesizing, and identifying. The organizing stage involved collecting, grouping, and organizing various literature based on the research's main themes, such as mental representation theory, second language acquisition, Arabic morphological structure, and the process of meaning formation. At this stage, the researcher classified the sources based on their relevance and contribution to the study's focus.

Next, the synthesizing stage was carried out by synthesizing various theories and previous research findings to build a comprehensive conceptual framework regarding the relationship between cognitive processes and learning Arabic as a second language. This synthesis process was carried out by comparing, connecting, and integrating various theoretical perspectives to gain a more comprehensive understanding. The identifying stage was carried out by identifying patterns of meaning formation in the mental representations of Arabic language learners, particularly those related to the influence of word root systems, morphosemantic relations, and the mechanisms of the mental lexicon on language comprehension.

In analyzing the data, this study used a Content Analysis approach combined with thematic analysis. Content analysis was used to identify key concepts, thought patterns, and theoretical tendencies found in the various literature reviewed. Through this approach, researchers examined the text content in depth to discover conceptual

relationships between mental representations, meaning formation processes, and Arabic language structure. Meanwhile, thematic analysis was used to group the data into specific themes, such as lexical retrieval processes, mental lexicon organization, mother tongue interference, and the influence of the Arabic morphological system on meaning formation. These two approaches are used in an integrated manner to enable the research to produce a systematic, objective, and in-depth analysis of the phenomenon of mental representation in learning Arabic as a second language.

Through this methodological approach, this research is expected to produce a comprehensive theoretical study with strong academic validity. Although based on literature, this research prioritizes the principles of systematicity, source relevance, analytical depth, and the clarity of scientific interpretation, thus making a conceptual contribution to the development of psycholinguistic studies and Arabic language learning.

RESULT AND DISCUSSION

The Concept of Mental Representation in Psycholinguistic Perspective

Mental representation, from a psycholinguistic perspective, refers to how the human brain encodes, stores, organizes, and accesses linguistic information within the cognitive system. In the process of learning a second language, mental representations serve as the primary foundation that enables learners to understand the relationship between linguistic symbols and their meanings. Language is not processed as a collection of stand-alone words, but rather as a network of information organized into specific mental structures, such as schemas, propositions, and a mental lexicon.

When someone learns Arabic as a second language, the brain not only receives the phonological form of a word but also builds interconnected semantic, morphological, and syntactic associations in long-term memory (Kira Gor et al., 2021). Thus, understanding meaning in Arabic is the result of a cognitive process involving the activation of prior linguistic knowledge, the recognition of linguistic patterns, and lexical retrieval mechanisms to access relevant meanings within the communication context.

In psycholinguistic studies, mental representations are understood as internal organizational systems that enable individuals to process language quickly and efficiently. Linguistic information received through perception is encoded into mental symbols and then stored in interconnected memory structures. This process occurs through the formation of semantic mapping, which is the mapping of relationships between word forms, concepts, and an individual's cognitive experiences (Qi Zhang, 2022).

In Arabic language learning, this mechanism becomes more complex because Arabic has a nonlinear morphological system based on roots (*jidzr*) and patterns (*wazan*). For example, the root word *k-t-b* can produce various forms such as *kataba*, *maktab*, *kitāb*, and *maktabah*, all of which are meaningfully related to the concept of "writing." In the process of mental representation, the learner's brain does not simply memorize these forms separately but organizes them into interconnected conceptual networks. This suggests that the Arabic morphological system demands a higher cognitive ability to recognize the relationship between form and meaning through mental categorization.

Views on mental representation in language have been developed by various psycholinguists using complementary approaches. Noam Chomsky (1965), through his theory of mental grammar, asserted that humans possess an innate language faculty that enables the brain to systematically structure language. This view suggests that language processing depends not only on external stimuli but also on the internal mental structures humans already possess. Meanwhile, Jean Piaget (1972) emphasized that language develops through the formation of cognitive schemas derived from an individual's interaction with their environment. In this context, second language learning is understood as a process of assimilation and accommodation to new linguistic information.

Steven Pinker (1994), through the concept of *mentalese*, explains that language is essentially translated into a mental representation system in the form of "thought language" before being produced in spoken form. These three views demonstrate that mental representations are the result of the interaction between innate human capacities, cognitive experience, and symbolic processing mechanisms in the brain. In Arabic language learning, these three perspectives are relevant in explaining how learners gradually develop an understanding of the patterns of speech, changes in pronunciation, and semantic relations between word forms.

The uniqueness of Arabic as a language based on a root system presents unique challenges in developing mental representations for non-native learners. Unlike non-Semitic languages, which tend to be linear, Arabic requires learners to recognize abstract relationships between root words and various morphological patterns that form new meanings. The process of interpreting verbs, for example, requires learners to understand changes in word form based on time, actor, and syntactic context while maintaining their basic meaning relationships.

From a psycholinguistic perspective, this condition indicates that Arabic mental representations are hierarchical and associative. Learners who lack a well-organized mental lexicon often struggle to connect morphological forms with precise meaning concepts. As a result, lexical retrieval is slow and often leads to interference from their first language. Conversely, learners who are able to construct structured mental representations tend to more easily understand word relationships, expand their vocabulary, and use Arabic productively in communication contexts.

Thus, mental representations from a psycholinguistic perspective are not only concerned with storing linguistic information but also reflect cognitive mechanisms that enable the dynamic formation of meaning. In learning Arabic as a second language, mental representations play a crucial role in helping learners understand the complex morphological system, *wazan* patterns, and interpretation processes. Therefore, the study of mental representations is crucial not only for understanding the process of Arabic language acquisition theoretically but also as a basis for designing more effective, contextual learning that is in line with the cognitive functioning of second language learners..

The Process of Forming Meaning in Learning Arabic as a Second Language

The process of constructing meaning in learning Arabic as a second language is a cognitive activity that involves various stages of language processing in the brain. When learners receive Arabic input, whether spoken or written, the brain first recognizes the language symbols received. At this stage, the visual and auditory perceptual systems work to recognize letter shapes, sound patterns, and the phonological structure of a word (Catherine McBride, 2022).

In Arabic, this process is more complex because learners must understand a unique sound system and written forms that differ from those commonly used in everyday language. Certain sounds, such as "ح", "ع", or "خ", are often difficult for non-native learners to process because the brain does not yet have a stable phonological representation of these sounds. Similarly, in orthography, the consonant-based Arabic script requires learners not only to recognize letters but also to understand the relationship between written form, sound, and meaningful context. Therefore, the initial stage of meaning formation in Arabic is not only related to the ability to read symbols, but also to the brain's ability to connect linguistic symbols with semantic information stored in the mental lexicon.

Once linguistic symbols are recognized, the brain enters the semantic processing stage through morphological analysis of words. At this stage, the learner's cognitive system attempts to identify the root and pattern (wazan) to discover the core meaning of a word. Unlike many non-Semitic languages, which process words linearly, Arabic uses the isytiqaq system, which forms semantic relationships through root words and derivational patterns. When a learner encounters a word like maktabah, for example, the brain connects it to the root "k-t-b," which has the basic concept of "writing," then interprets the word pattern as a marker of place (Thomure and al Harthy, 2022).

Thus, word understanding does not arise from surface form alone, but from the relationship between the root and its morphological structure. In this process, the brain performs semantic mapping, which is the mapping of the relationship between linguistic symbols and related concepts of meaning. The stronger the connection is stored in mental memory, the quicker the learner will grasp the word's meaning and its relationship to other derivations, such as kitab, kâtib, or maktûb. Conversely, learners who lack a well-organized mental lexicon tend to understand vocabulary in isolation, unable to discern semantic connections between word forms.

The relationship between linguistic symbols and mental concepts is crucial in the process of meaning formation. When a learner sees the word "رابط" or hears the sounds ra-ba-ta, the brain not only processes it as a series of letters and sounds but also associates it with specific concepts such as "bond," "relationship," or "connectedness." This process demonstrates that meaning does not emerge automatically from linguistic symbols but is instead formed through mental activity that connects linguistic signs with experiences and knowledge already stored in memory (Schwartz and Kroll, 2021).

In second language learning, this process is often slower because learners still use their mother tongue as a medium for understanding Arabic meaning. As a result, learners tend to translate words literally before being able to grasp the meaning directly within the

Arabic language system itself. This condition shows that meaning formation is not only a linguistic process, but also a cognitive reorganization process that requires learners to construct a new network of concepts according to the characteristics of the Arabic language. Besides being influenced by morphological structure, meaning in Arabic is also strongly determined by the context of the sentence and the situation in which the language is used. A single word can have different meanings depending on its syntactic position, i'rab form, and the surrounding pragmatic context. Therefore, the learner's brain must engage in a disambiguation process to determine the meaning that best fits the context of the utterance or text being understood.

From a psycholinguistic perspective, the process of understanding meaning does not occur linearly, but rather through the activation of various lexical representations stored in mental memory. When learners receive Arabic input, the brain connects the received linguistic forms with their prior knowledge of the language to construct an interpretation of meaning. The stronger the network of connections between vocabulary, language structure, and language experience, the faster and more accurate the comprehension process will be. Conversely, limited Arabic language proficiency slows down the process of accessing meaning and requires greater cognitive effort (Zulfa, 2023).

In this process, the cognitive system activates several possible meanings simultaneously, then selects the most relevant one based on the relationships between words in the sentence. This process requires simultaneous coordination of morphological, syntactic, and semantic processing. For second language learners, this stage often presents a barrier due to interference from the mother tongue, which affects how they understand Arabic structure and meaning. Learners often use the semantic mindset of their first language when interpreting Arabic, resulting in inaccurate or overly literal understanding (Mohammed H. Alqarni, 2023).

Overall, the process of meaning formation in Arabic language learning occurs through interrelated stages, starting from receiving linguistic input, recognizing linguistic symbols, analyzing morphosemantics, integrating context, and internalizing meaning into long-term memory. The more frequently learners interact with Arabic language patterns in various contexts, the stronger the mental representations formed in their cognitive systems. Thus, learning Arabic as a second language is essentially a process of forming and reorganizing mental representations, enabling learners to understand the relationship between linguistic symbols, morphological structures, and concepts of meaning more deeply and systematically.

Arabic Language Structure and Its Influence on Mental Representations

Arabic language structure has unique linguistic characteristics that distinguish it from many other languages, particularly in its morphology, syntax, and semantic system. These unique characteristics directly influence how learners construct mental representations when learning Arabic as a second language. From a cognitive perspective, language structure functions not only as a formal tool for constructing utterances but also as the primary input that shapes patterns of meaning organization in the mind (Mahmoud Al-Khresheh, 2021).

Arabic, with its derivational root-pattern system, requires learners to process language through relationships between word forms and complex semantic networks. When learners encounter several words derived from the same root, such as *kataba*, *kitāb*, *maktab*, and *maktabah*, the brain does not store them as separate lexical units but organizes them into a single mental cluster that shares a common core meaning: the concept of "writing." This process demonstrates that mental representations in Arabic are formed through association and hierarchies, with the root serving as a conceptual hub connecting various morphological derivations within a single network of meaning. Thus, the root-pattern system not only facilitates vocabulary formation but also influences how the brain mentally groups and accesses linguistic information.

In the process of learning Arabic, the complexity of morphology and syntax contributes to more detailed and analytical cognitive processing patterns. The Arabic *tasrif* system requires learners to simultaneously understand changes in word form based on tense, actor, number, and gender. Each morphological change carries specific semantic implications, requiring learners to be able to connect linguistic forms with their corresponding meaningful functions. Furthermore, the *i'rab* system, as a marker of syntactic relations, imposes an additional processing burden because changes in the final vowel can alter the grammatical function and the representation of a word's meaning within a sentence.

For example, a change in vowel in a particular word can shift the word's position from subject to object or qualifier, requiring the learner's brain to perform continuous syntactic analysis to accurately understand the meaning relationships. Cognitive-wise, this requires a higher level of mental precision in learning Arabic than languages without complex inflectional systems. Learners are not only required to understand vocabulary but also to maintain attention to morphological and syntactic details that are crucial for interpreting meaning.

The fundamentally different structure of Arabic from the learner's native language often leads to linguistic interference in the process of forming mental representations. Indonesian learners, for example, tend to bring their native language's syntactic thought patterns into Arabic processing. As a result, the native language's structure is "forced" onto the Arabic system, which has a different grammatical logic. In the *na'at-man'ut* construction, for example, learners often encounter difficulties because Arabic requires agreement between the type, number, and definiteness of adjectives and nouns, whereas in Indonesian these relations are not strictly regulated.

The same thing occurs with the *idhafah* structure, where learners often interpret possession relationships linearly according to the native language's patterns. Cognitively, this interference indicates that the learner's brain still uses the mental representation schemes from their native language when processing Arabic. As a result, understanding meaning is not entirely based on the internal systems of Arabic, but rather through the mediation of the conceptual structures of their native language (Rifa'i et al., 2024). This condition slows the process of forming stable mental representations because learners

must reorganize their cognitive schemes to conform to the semantic and syntactic logic of Arabic.

In addition to morphological factors and first language interference, Arabic language learning is also influenced by the high cognitive load stemming from the language's internal linguistic characteristics. The phenomenon of diglossia, the distinction between formal and informal languages, creates two linguistic representation systems that learners must process simultaneously. In practice, learners often encounter different vocabulary forms or structures between formal and spoken language, requiring the brain to continually adjust its representation of meaning based on the context in which the language is used (Herlambang et al., 2025). The cognitive load is further increased because Arabic writing systems generally do not fully represent short vowels.

This condition forces learners to predict the sound and meaning of words based on the available syntactic and morphological context. From a mental processing perspective, this phenomenon is known as vowel blindness, which is the difficulty in quickly recognizing phonological representations due to the lack of vowel markers in text. When learners lack a strong mental lexicon organization, word identification is slower and prone to misinterpretation of meaning. Therefore, forming mental representations in Arabic demands a higher working memory capacity, attention, and linguistic analytical skills than learning languages with simpler structures.

Thus, the structure of Arabic has a significant influence on the formation of mental representations in second language learners. The root system forms a network of semantic associations in mental memory, while the complexity of *tasrif* and *i'rab* demands cognitive precision in understanding meaning relationships. On the other hand, first language interference and the high cognitive load resulting from diglossia and the writing system without short vowels often hinder the process of language internalization. This overall linguistic structure demonstrates that learning Arabic is essentially not only a process of mastering language rules, but also a process of cognitive adaptation that involves reorganizing ways of thinking and how to map meaning within the learner's mental system.

Factors Influencing Mental Representation in Arabic Language Learning

Mental representations in Arabic language learning are influenced by cognitive, linguistic, psychological, and social and cultural factors. From a cognitive perspective, working memory capacity, attention to linguistic elements, and frequency of language exposure play a role in shaping and strengthening learners' mental representations. The better the ability to process and store linguistic information, the more stable the mental representations formed (Cowan, 2022). From a linguistic perspective, the complexity of Arabic morphology and syntax, as well as first language interference, can influence the meaning-formation process. Adequate vocabulary mastery and the ability to independently understand Arabic language structures help learners construct more accurate mental representations (Khirallah & Alenezi, 2023).

Furthermore, psychological factors such as motivation, self-confidence, and language anxiety also determine the quality of mental representations. High motivation

and self-confidence encourage deeper language processing, while anxiety can hinder comprehension and access to linguistic information (Dörnyei & Ryan, 2022). Social and cultural factors also influence the intensity of interaction with Arabic and understanding of the culture of its speakers. A learning environment rich in language exposure and an understanding of cultural context helps learners build stronger connections between language form, meaning, and its use in communication (Kramersch, 2022).

Based on this, it can be argued that mental representations in Arabic language learning are not formed in a single instance, but rather through the integration of cognitive, linguistic, psychological, and sociocultural factors. These four factors contribute to how learners receive, process, store, and access Arabic language information. Therefore, efforts to improve the quality of mental representations need to be carried out through a learning approach that not only focuses on linguistic aspects but also takes into account learners' cognitive characteristics, affective support, and the provision of contextual and meaningful language experiences.

Problems of Meaning in Arabic Language Learning

The problem of meaning-making in learning Arabic as a second language is fundamentally rooted in a mismatch between the linguistic structure of Arabic and the learner's mental representation mechanisms. In the process of language comprehension, the brain not only passively receives linguistic symbols but also simultaneously interprets the relationships between meanings, grammatical functions, and the context in which the language is used. When this process is disrupted, the resulting mental representation becomes unstable, fragmented, and even deviates from the original meaning. As a result, learners not only misunderstand the message but also struggle to produce language accurately because the conceptual system stored in their minds has been erroneously formed since the early stages of meaning processing.

One of the main problems in learning Arabic is the ambiguity of vocabulary meaning that arises from the phenomena of polysemy and homonymy. Many Arabic words have more than one meaning that differs depending on the syntactic and pragmatic context in which they are used. In this situation, learners often activate only the most familiar representation of meaning in their mental lexicon without considering the possibility of other meanings that better fit the context of the sentence. As a result, the meaning-making process occurs in a literal and narrow manner (Khirallah and Alenezi, 2023).

When learners encounter a word that lexically has multiple possible interpretations, the brain actually needs to disambiguate by connecting semantic, syntactic, and contextual information simultaneously. However, limited linguistic experience and weak mental representational organization cause learners to fail to select the most relevant meaning. In this situation, the mental representation formed does not align with the intended meaning of the utterance, resulting in partial or even completely deviating understanding from the communication context. These errors not only impact text comprehension but also affect learners' ability to use vocabulary appropriately in language production.

Another problem that significantly impacts meaning formation is misinterpretation of sentence structure due to a failure to understand the i'rab system and syntactic functions of Arabic. In Arabic, changes in the final vowel have a crucial role in determining grammatical relationships between words, such as marking the subject (fa'il), object (ma'ul bih), and other syntactic functions. A small error in reading or interpreting the vowels can completely alter the construction of meaning in a learner's mind. When a learner fails to identify the actor and recipient of an action in a sentence, the brain constructs an inverted conceptual representation (Rosyidi and Thohir, 2023).

From a psycholinguistic perspective, this occurs because the mapping process between syntactic structure and conceptual meaning is not synchronized. The brain receives linguistic symbols but fails to connect them to the correct semantic relationships. As a result, a learner may understand the formal word order but be unable to form a logical understanding of the sentence's content. This distorted mental representation often leads to failure to comprehend more complex texts and directly impacts the ability to produce accurate language.

Psycholinguistic Implications for Arabic Language Learning

The implications of psycholinguistics for Arabic language learning indicate that curriculum design and teaching materials need to be structured based on the learner's cognitive functioning, particularly regarding information processing capacity and the formation of mental representations. Currently, Arabic language materials are often presented separately between vocabulary, morphology, and syntax, leading learners to memorize language forms without understanding the underlying conceptual relationships. From a psycholinguistic perspective, this approach has the potential to increase cognitive load because the brain is forced to store language units fragmentarily. Therefore, the development of learning materials needs to be directed toward a more systematic pattern of meaning organization, particularly through the root system and derivative relation (ishtiqaq) approach.

Introducing root-based vocabulary allows learners to build semantic association networks from the early stages of learning, thus making the mental representations more structured and easily accessible (Abdelsalam and Mohamed, 2025). By understanding the relationship between a root word and its various derivatives, learners not only expand their vocabulary but also develop the ability to predict meaning more efficiently. This approach makes the Arabic learning process more in line with the workings of the mental lexicon, where linguistic information is stored in a network of interconnected meanings, rather than as isolated memorization.

In terms of teaching methodology, the psycholinguistic approach demands a shift from rote-based learning to meaning-processing-based learning. Arabic language learning no longer emphasizes mechanical mastery of grammatical rules but must be directed at the learner's ability to build connections between linguistic symbols and mental concepts contextually. In this regard, teachers play a crucial role in creating a learning environment rich in linguistic and communicative contexts so that the semantic mapping process can occur naturally.

When vocabulary and language structures are introduced through real-life contexts, learners' brains more easily connect linguistic forms with relevant conceptual experiences. Conversely, learning that solely emphasizes memorizing vocabulary lists or grammar patterns tends to produce shallow mental representations that are difficult to use in actual communication. The contextual approach also helps learners grasp meaning flexibly, especially when dealing with polysemous vocabulary or complex syntactic structures. Thus, a teaching strategy based on meaning processing will accelerate the formation of mental representations that are more stable, integrative, and adaptive to various situations of Arabic language use.

Psycholinguistic implications are also evident in the evaluation and management system for the affective aspect of Arabic language learning. Learning evaluation should not only focus on formal grammatical accuracy but also consider the fluency of learners' mental processes (mental fluency) in understanding and producing language. Learners who are able to access meaning quickly and contextually demonstrate that their mental representations are well-organized within their cognitive system. Conversely, delays in understanding speech or difficulty connecting language forms with specific meanings can indicate a disruption in the mental representation process (Alrashed and Alenazi, 2024). Therefore, Arabic language assessments need to be designed to measure comprehensive meaning processing abilities, not just the ability to memorize rules.

Furthermore, affective aspects also have a significant influence on the success of mental representation formation. A stressful and anxious learning environment can narrow attention and impair working memory capacity, making it difficult to process language input optimally. Conversely, a low-anxiety learning environment allows learners to be more open to new linguistic input and more willing to explore language without fear of error. In a positive psychological state, the process of internalizing meaning occurs more effectively because the learner's cognitive system is ready to receive, process, and store linguistic information more deeply (Nelson Cowan, 2022).

Based on a synthesis of the various findings presented, researchers believe that various phenomena that emerge in Arabic language learning are closely related to the process of forming mental representations within the learner's cognitive system. Difficulty understanding vocabulary, misinterpreting sentence structure, and even first language interference cannot be viewed as isolated problems, but rather as indicators of the lack of a strong and organized network of meanings in memory. Thus, mental representations can be viewed as a central point bridging the gap between linguistic input and comprehensive language comprehension.

These findings indicate that successful Arabic language learning is determined not only by vocabulary mastery or understanding of grammatical rules, but also by the quality of the mental representations formed within the learner's cognitive system. Therefore, Arabic language learning needs to be designed in such a way that it can help learners build strong connections between language form, meaning, and the context in which it is used. This can be achieved through contextual presentation of material, the use of authentic media, and learning activities that encourage learners to connect new knowledge with prior knowledge. In this way, the network of meaning in memory will develop a more organized

structure, enabling learners not only to remember linguistic information but also to understand and use Arabic more flexibly and communicatively.

CONCLUSION

The conclusions of this study indicate that mental representation plays a central role in learning Arabic as a second language, particularly in the process of meaning formation. From a psycholinguistic perspective, Arabic is not processed as a stand-alone vocabulary, but rather as a symbolic network organized through the relationship between root words and morphological patterns (*wazan*). The Arabic root system forms a semantic association structure that enables learners to connect various word derivations into a single, interrelated concept of meaning. This cognitive process occurs through linguistic symbol recognition, morphosemantic analysis, context integration, and internalization of meaning into the mental lexicon. Thus, Arabic comprehension is essentially a process of reorganizing mental representations that involves working memory, attention, linguistic experience, and the ability to contextually connect linguistic forms with concepts of meaning.

This study also confirms that a psycholinguistic perspective makes an important contribution to the development of Arabic language learning in Indonesia. Understanding the mechanisms of mental representation can help teachers design more effective learning strategies, particularly in improving vocabulary retention, lexical retrieval speed, and meaning accuracy. A root-word system and lexical network-based approach enables learners to understand the relationships between words more systematically than linear memorization methods. Furthermore, attention to cognitive, psychological, social, and cultural factors can help reduce cognitive load and minimize first language interference in the meaning-formation process. Therefore, Arabic language learning needs to be directed at strengthening semantic mapping, developing communicative contexts, and creating a learning environment that supports the stability of learners' mental representations.

However, this article still has limitations because its discussion is oriented more toward theoretical-conceptual analysis and is not supported by empirical testing on specific learner groups. This study also does not specifically compare differences in mental representations between beginner, intermediate, and advanced learners or experimentally measure the influence of affective factors and working memory capacity on successful Arabic meaning acquisition. Therefore, further research is recommended to develop empirical studies based on experiments, neurolinguistics, and longitudinal studies to examine the process of mental representation formation in more depth. It is also important that future research is directed at developing curriculum models, digital media, and Arabic language learning strategies based on cognitive load and strengthening lexical networks so that the meaning acquisition process is more effective, adaptive, and in accordance with the cognitive characteristics of second language learners in Indonesia.

REFERENCE

- Abdelsalam, R., & Mohamed, H. (2025). Semantic network development through root-based vocabulary instruction in Arabic as a second language. *Language Teaching Research Quarterly*, 35, 68–84. <https://doi.org/10.32038/ltrq.2025.35.06>
- Alqarni, M. H. (2023). Root and pattern morphology processing in Arabic second language acquisition. *Journal of Psycholinguistic Research*, 52(3), 605–623. <https://doi.org/10.1007/s10936-022-09871-4>
- Alrashed, K., & Alenazi, I. (2024). Morphological awareness and semantic retrieval in Arabic second language learners. *Frontiers in Education*, 9, Article 1357821. <https://doi.org/10.3389/educ.2024.1357821>
- Chomsky, N. (1965). *Aspects of the theory of syntax*. MIT Press.
- Cowan, N. (2022). Working memory constraints in second language processing. *Language Learning*, 72(2), 301–329. <https://doi.org/10.1111/lang.12489>
- Dewaele, J.-M., & MacIntyre, P. D. (2021). The predictive power of multicultural personality traits, learner and teacher variables on foreign language enjoyment and anxiety. *Studies in Second Language Learning and Teaching*, 11(1), 1–25. <https://doi.org/10.14746/sslt.2021.11.1.1>
- Dörnyei, Z., & Ryan, S. (2022). The psychology of the language learner revisited. *Language Teaching Research*, 26(4), 500–520. <https://doi.org/10.1177/13621688211067831>
- Gor, K., Cook, S., Bordag, D., Chrabaszcz, A., & Opitz, A. (2021). Fuzzy lexical representations in adult second language speakers. *Frontiers in Psychology*, 12, 732030. <https://doi.org/10.3389/fpsyg.2021.732030>
- Herlambang, D., Shofiyah, S., Nurhidayah, N., & Sari, R. (2025). Analisis konten video Instagram sebagai peningkatan maharah istima' mahasiswa Prodi PBA ISQ Syekh Ibrahim. *Ihtimam: Jurnal Pendidikan Bahasa Arab*, 8(2). <https://doi.org/10.36668/jih.v8i02.1440>
- Ibrahim, A., & Hassan, M. (2024). Cognitive load in Arabic reading comprehension: Challenges of diacritic-free texts. *Journal of Psycholinguistic Research*, 53(2), 205–223. <https://doi.org/10.1007/s10936-023-09912-7>
- Khirallah, M., & Alenezi, A. (2023). Contextual meaning and semantic disambiguation in Arabic second language learning. *Arab World English Journal*, 14(1), 210–225. <https://doi.org/10.24093/awej/vol14no1.15>
- al-Khresheh, M. (2021). A review study of error analysis theory. *International Journal of Psychosocial Rehabilitation*, 24(8), 1230–1245. <https://www.psychosocial.com/article/PR280126/17365/>
- Kramsch, C. (2022). Language and culture in second language learning. *Foreign Language Annals*, 55(2), 210–228. <https://doi.org/10.1111/flan.12602>
- Maesaroh, W., Cahyani, A., Al-Madani, I. K., & Susiawati, I. (2026). Arabic morphology: Derivational patterns and their application in Arabic language teaching. *INCARE International Journal of Educational Resources*, 6(5), 623–634. <https://doi.org/10.59689/incare.v6i5.1311>
- McBride, C. (2022). Visual word recognition and orthographic processing in second language learning. *Languages*, 7(1), 1–18. <https://doi.org/10.3390/languages7010015>
- Piaget, J. (1972). *The psychology of the child* (H. Weaver, Trans.). Basic Books. (Original work published 1969)

- Pinker, S. (1994). *The language instinct: How the mind creates language*. William Morrow and Company.
- Rifa'i, M., Ahmad, F., Farhani, I. I., & Kusuma, A. B. (2024). Pengaruh bahasa ibu (interferensi) terhadap kesalahan tulisan (kitabah) mahasiswa Program Studi Pendidikan Bahasa Arab Sekolah Tinggi Agama Islam Sunan Pandanaran Yogyakarta. *Ihtimam: Jurnal Pendidikan Bahasa Arab*, 7(1). <https://doi.org/10.36668/jih.v7i1.738>
- Rosyidi, A. H., & Thohir, M. (2023). Arabic morphological awareness and its impact on reading comprehension among second language learners. *Arabiyat: Jurnal Pendidikan Bahasa Arab dan Kebahasaaraban*, 10(1), 45–63. <https://doi.org/10.15408/a.v10i1.31145>
- Schwartz, A., & Kroll, J. F. (2021). Bilingual lexical access and conceptual representation in second language processing. *Languages*, 6(4), 185. <https://doi.org/10.3390/languages6040185>
- Stille, C. M., Bekolay, T., Blouw, P., & Kröger, B. J. (2020). Modeling the mental lexicon as part of long-term and working memory and simulating lexical access in a naming task including semantic and phonological cues. *Frontiers in Psychology*, 11, 1594. <https://doi.org/10.3389/fpsyg.2020.01594>
- Taha-Thomure, H., & Al-Harthy, F. (2022). Arabic phonological processing and reading acquisition among non-native learners. *Reading Psychology*, 43(4), 295–314. <https://doi.org/10.1080/02702711.2022.2034567>
- Wiwin, K. N., 'Aini, N. M., Riyadi, S., & Susiawati, I. (2026). Analogi morfologi, sintaksis, dan semantik sebagai pilar linguistik Arab serta implikasinya terhadap pedagogi modern. *INCARE International Journal of Educational Resources*, 6(4), 505–520. <https://doi.org/10.59689/incare.v6i4.1298>
- Zhang, Q. (2022). A theoretically psychological analysis of semantic representation of bilinguals' mental lexicon. *Journal of Advances in Linguistics*, 13, 4–9. <https://doi.org/10.24297/jal.v13i.9255>
- Zulfa, D. R. (2023). Pembelajaran Bahasa Arab Berbasis Pendekatan Psikolinguistik: Implikasi dan Implementasinya. *Ihtimam: Jurnal Pendidikan Bahasa Arab*, 6(1). <https://journal.staimsyk.ac.id/index.php/ihtimam/article/view/449?>